of Jesus, and finally, in 1884, he was made Superior of the Mission on the Zambesi. He died at St. Aidan's College, Grahamstown, on July 24 of the past year.

Father Weld was a man of exceedingly polished manners, and distinguished by great energy and tact in the conduct of business. He was twice employed by His Holiness Pope Leo XIII. in the management of delicate affairs, in which he succeeded admirably. How bravely he bore himself at Gibraltar under the savage attack of a mob of roughs is well known. He never lost his interest in science. When Provincial he gave Father Perry all possible encouragement. When Superior of the Zambesi Mission he set up a Stevenson screen and meteorological instruments at St. Aidan's College. Moreover, he purchased a set of instruments for observing the magnetic elements, and sent an assistant to M. d'Abbadie to be trained in their use, so that he might make magnetic observations in his missionary journeys. Unfortunately, the instruments becoming damaged, without means of getting them repaired, the attempt was rendered abortive.

Father Weld published a few communications in Vol. XI. of the *Monthly Notices*. He contributed several articles on scientific subjects to the *Month*, and he was the author of an extensive historical work on the suppression of the Jesuits in Portugal.

He was elected a Fellow of this Society January 12, 1849.

Christian Heinrich Friedrich Peters was born on September 19, 1813, at Coldenbüttel, in the province of Schleswig, where his father, Hartwig Peters, was a minister. He received his early education, from 1825 to 1832, at the Gymnasium at Flensburg, and subsequently proceeded to Berlin, where he studied mathematics and astronomy under Encke. After taking his Doctor's degree in 1836 he tried to obtain an appointment at the Copenhagen Observatory, in which he was unsuccessful. He then went to Göttingen to pursue his studies under Gauss. He subsequently accompanied Sartorius von Waltershausen to Mount Etna to make a scientific survey of the mountain, and afterwards was made director of the Trigonometrical Survey of Sicily, which position he occupied for some years.

On the revolution breaking out in 1848 he took part against the Government, and was deprived of his appointment. He had to escape on board an English vessel to Malta, whence he soon returned to Sicily, where he took service in the Sicilian army as Captain of Engineers, under Mieroslawski. He soon became major, and under his direction Catania and Messina were fortified. When Palermo fell into the hands of the Neapolitans in May 1849, Peters fled to France, but shortly afterwards proceeded to Constantinople.

Here he made many friends, and the Sultan proposed to send him in charge of a scientific expedition to Syria and Palestine.

Various obstacles stood in the way, and on the Crimean war breaking out in 1854 the expedition was abandoned. This time, however, was valuable to Peters, as it enabled him to become proficient in the Turkish and Arabic languages, which proved of essential service to him of late years in his researches on Ptolemy's Catalogue of Stars.

In 1854 he went to the United States with recommendations from Alexander von Humboldt to the Observatory at Cambridge, Massachusetts. Thence he went to Washington, where he obtained an appointment on the United States Coast Survey. He then became connected with an observatory at Utica, and finally in 1858 was appointed director of the Litchfield Observatory at Clinton, New York, and Professor of Astronomy at Hamilton College, which appointments he held until the day of his death.

Dr. Peters published his first scientific paper in the 13th volume of the *Astronomische Nachrichten*, on the Solar Eclipse of 1836 May 15; and during his life he contributed several papers to the same journal.

About 1845 Peters began his important researches on the Sun, which he continued till some time after 1865. The observations of Sun-spots which he made at Naples in 1845–1846 with a $3\frac{1}{2}$-inch refractor have never been entirely published; but an admirable paper, based upon those observations and entitled "Contributions to the Atmospherology of the Sun," was published by him in 1855 in vol. ix. of the Proceedings of the American Association for the Advancement of Science. In this paper, which has been characterised as much in advance of anything else which has appeared on the subject, he describes the growth and decay of Sun-spots, and records the remarkable phenomena of flashes extending across an umbra with electrical velocity, in these words: "Two of the notches in the margin of a Sun-spot, from opposite sides, step forward into the area, overroofing even a part of the nucleus; and suddenly from their prominent points flashes go out, meeting each other on their way, hanging together for a moment, then breaking off and receding to their points of starting. Soon this electric play begins anew, and continues for a few minutes, ending finally with the connection of the two notches, thus establishing a bridge, and dividing the spot into two parts. The flashes proceed with great speed, but not so that the eye may not follow them distinctly." On the subject of the *proper motion* of Sun-spots, Peters will rank among the earliest observers who clearly recognised this feature. His remarks thereon in the above-mentioned paper may fitly be quoted. He says: "The first fact now, which offers itself, in comparing the heliographic places of one and the same spot for different days, is that the spots are not invariably attached to the Sun's surface, but have *proper motion*. A general proper motion of the spots towards the Equator being recognised, the question is raised naturally: Have they any motion also in longitude? and in what direction—to the east or to the west? The solution of this question is intimately connected with the

determination of the time of rotation. For it is clear, if all the spots had an equal proper motion in longitude, the time of the Sun's rotation, since it is deduced from the spots, would be wrong. In other words, it is the time of rotation of the spots which results, and not that of the Sun itself . . . there can be no doubt of a very considerable motion parallel to the Equator. The displacements in longitude seem even far more considerable than those in latitude. Whether there be a common motion, and in what direction, cannot be decided in the present state of our knowledge of the Sun's rotation."

Carrington thus remarks on the above discovery : " So nearly did this able observer come to the term in latitude without obtaining it, and leave its actual determination to me."

In 1860 he determined to devote the 13-inch refractor of the Litchfield Observatory to the preparation of a series of zodiacal star-charts, to include all stars visible with a power of 80 upon that telescope. His desire was to represent portions of the sky in a picture that in future ages might serve as a sure basis for drawing conclusions as to changes going on in the starry heavens. This was before photography presented itself as a more satisfactory method of realising that aspiration. The first instalment of Peters' zodiacal charts was published in 1882, and at present twenty only are in the hands of astronomers, but many more are nearly or quite completed. The zone observations which form the groundwork of these charts number over 100,000.

The zeal and assiduity with which Peters pursued this work met with their reward in the discovery of the remarkable number of 48 minor planets.

In 1874 Peters acted as chief of the United States expedition to New Zealand to observe the transit of *Venus*. His station was at Queenstown, where he arrived on October 16, and remained exactly three months. His observations were seriously interfered with by bad weather, but he succeeded in securing a good observation of first internal contact.

Some few years ago Peters determined to collate, as far as possible, all existing manuscripts of the catalogue of stars which is be found in the 7th and 8th books of Ptolemy's *Almagest*, so as to produce a more accurate edition of that catalogue than we at present possess. For this purpose he visited the celebrated public libraries at Florence, Venice, Vienna, Paris, Berlin, and other cities on the continent, and collated all the available MSS. of the *Almagest* therein to be found. The collating of the MSS. in this country was undertaken by the writer of this notice, who had independently been working for the same object. In this work Peters showed high intelligence and sagacity in the interpretation of doubtful readings ; and the publication of the work may be looked forward to as likely to reveal many interesting points connected with the earliest known catalogue of the positions of stars.

On the morning of July 19, 1890, Dr. Peters was found lying dead upon the doorstep of the college building where he

lodged. His observing cap was on his head, and it is presumed that a sudden spasm from heart disease struck him down while on his way to the observatory to commence his nightly work.

Dr. Peters was a man of the highest integrity and honour, courteous in his bearing and of a most kindly nature. He was an accomplished scholar, and had great linguistic attainments, even to the extent of publishing a scientific paper in the Turkish language. He was an able and accurate mathematician and astronomer, whose fame is due "not to transcendent genius, or brilliant episodes, but to faithful, diligent toil, and life-long devotion to his chosen profession."

He was elected an Associate of this Society January 10, 1879.

Otto August Rosenberger, who at the time of his death was the senior Associate of this Society, was born on August 10, 1800, at Tukkum, in the province of Courland, in Russia. He was the son of a medical man, who, in 1811, migrated to Königsberg, in Prussia, probably in consequence of his brother being the director of the Gymnasium in that city, from whom young Rosenberger then received his early education. He entered the University of Königsberg as a student of mathematics in 1819, and pursued his academical studies till the autumn of 1825.

At this period the immortal Bessel was Director of the Königsberg Observatory. He readily recognised the talent displayed by the foreign student, who was one of his pupils at the University, and in 1823 he appointed him an assistant at the Observatory. In this position he remained for three years. During this period Rosenberger published his first scientific paper, which will be found in the first volume of the *Astronomische Nachrichten*, on the elements of the orbit of the comet of 1821; his second paper, on the elements of the comet of 1818, was published in Bode's *Jahrbuch* for 1824.

In 1826, a vacancy having occurred at the Observatory of Halle, Bessel proposed his assistant for the post, upon which Rosenberger was appointed Extraordinary Professor of Applied Mathematics at the Halle University, and Observer at the Observatory. In quitting Königsberg, Bessel recorded his good services to astronomy by saying: "The journals of the Observatory for the last few years contain proofs of his activity in the functions of this institution, which by his departure has lost an excellent assistant."

Rosenberger entered upon his duties at Halle in October 1826, having in the previous July taken his Doctor's degree at Königsberg. Five years later he was promoted to be Ordinary Professor of the University, and Director of the Observatory. In Halle his activity as an astronomer was seriously hampered by the condition of the Observatory, which had been built in 1790 merely for educational purposes. There were none but antiquated instruments, and not even a reliable clock. Consequently the first task he proposed to himself was to procure a